

Serial No.: 10/730,440  
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**Amendments to the Drawings:**

The attached sheet of drawings includes new FIG. 8. This sheets replaces the original drawing sheet (5/5) including FIG. 7.

Attachment: Replacement Sheets

### **REMARKS/ARGUMENTS**

Subsequent to the Office Action issued on 1/11/2005, claims 1-33 are pending in the Application. Claims 5, 10, 15, 17 and 28 have been withdrawn from consideration. Claims 1-4, 6-9, 11-14, 1, 18-27, 29 and 31-33 stand rejected.

The Office Action objected to the drawings under 37 CFR 1.83(a) as failing to show every feature of the invention specified in the claims. Corrected drawing sheets are submitted herewith addressing the reasons for the objection. No new matter has been added by the corrected drawing sheets.

The Office Action rejected claims 2-9, 11-14, 16, 18-27 and 29-32 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out an distinctly claim the subject matter which applicant regards as the invention. More particularly, lack of antecedent basis for the term "the damper" in the first line of the rejected claims was alleged. Applicant has amended claims 2-4, 7-9, 12-14, 16, 18-27 and 29-33 reciting "the damping apparatus". Claims 5, 6 and 11 which were identified in the rejected ranges did not require amendment because claim 5 is a withdrawn claim and claims 6 and 11 are independent claims providing antecedent basis for the amended claim terms (i.e. "the damping apparatus"). Applicant also amended claim 33 which was not recited in the ranges of rejected claims but which reasonably required the same recitation of "the damping apparatus." The Office Action further rejected claim 32 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended claim 32 to correct the noted indefiniteness.

The Office Action rejected claims 1-4, 6-9, 11-14, 16, 18, 20-22 and 24 under 35 U.S.C. § 103(a) as being unpatentable over USPN 4946131 to Weyand (*Weyand*) in view of USPN 5878997 to Miesner (*Meisner*).

Weyand discloses a passive, calibratable damper arrangement for damping linear movements for use on a safety valve. The damper includes a damping part 36 including a hub section 34 and wall 32. Wall 32 resides within gaps filled with

viscous silicone grease. Hub section 34 is mounted by a bearing or threads which allow rotary motion only. Hub section 34 has internal threads 40 that cooperate with external thread section 12 of a valve spindle. The valve spindle moves in a linear manner and the cooperating threads 12 and 40 converts the linear motion to rotary movement of the damping part 36. Weyand does not disclose a rotatable shaft that is rotatably coupled to the translatable member or a damping mechanism comprising a hub that is fixed to the shaft. Weyand is primarily concerned with providing precise and simple adjustments to a displacement-independent damping at the point of installation. Weyand is secondarily concerned with providing a displacement-dependent damping component. Significantly, Weyand discloses the damper structure to teach readily adjustable displacement-independent damping (by positioning a lower damping part 18 which affects immersion depth of the rotary damper with threaded rings 26 and 28) and a displacement-dependent damping (by way of thread pitch of threads 48 and 50).

Miesner discloses an active magnetorheological damper. The damper includes an inner field coil 120, an outer field coil 130 and a magnetorheological fluid filled narrow channel 60 therebetween. Miesner does not disclose an outer surface of a hub and sidewall of a housing defining a channel therebetween in which a single electromagnetic field is generated and a fluid located within the channel having a viscosity that can be varied by application of the electromagnetic field. Miesner is primarily concerned with the conflicting goals of un-typically high magnetic flux densities and short response times in a magnetorheological device. Meisner teaches an electro-magnetic structure that, by design, results in very little magnetic flux present in its metal parts, thereby avoiding undesirable magnetic saturation, excessive stored energy and excessive response times when switching between damping and non-damping states. Significantly, Miesner discloses the damper to teach the cooperative dual-coil arrangement whereby each coil generates a separate respective magnetic field. The arrangement is specifically designed such

that the magnetic fields substantially cancel out everywhere within the damper except within the narrow channel between the individual coils.

In contradistinction, claims 1, 6 and 11 as amended, continue to claim the invention including the limitation of:

a rotatable member comprising a rotatable shaft that is rotatably coupled to the translatable member; wherein translation of the translatable member in one of the forward or the reverse directions produces a forward or a reverse rotation of the rotatable member and shaft.

Claim 1, 6 and 11 as amended, also further clarify the invention claimed as including the limitation of "a means for generating a single electromagnetic field" as part of the damping mechanism. Claims 6 and 11 as amended, also further clarify the invention claimed as including the limitation of:

the outer surface of the hub and sidewall of the housing define a channel therebetween, a means for generating a single electromagnetic field within the channel, and a fluid located within the channel having a viscosity that can be varied by application of the electromagnetic field.

The United States Court of Appeals for the Federal Circuit (CAFC) has stated in determining the propriety of a rejection under 35 U.S.C. § 103, it is well settled that the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that "[a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976). See also In re Lalu, 747 F.2d 703, 705,

223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.")

More specifically, the Board of Patent Appeals and Interferences has recognized that an examiner relying on the theory that a person of ordinary skill in the art is looking for an alternative is under the burden to establish why the alternative would be sought. In re Jones, 62 USPQ2d 1206 (B.P.A.I. 2001) (unpublished). Prior art may be considered not to teach an invention particularly when the stated objectives of the prior art reinforce such an interpretation. See WMS Gaming Inc. v. International Game Tech., 184 F.3d 1339, 51 USPQ2d 1385 (Fed. Cir. 1999). A prior art reference may be considered to teach away from the proposed combination when such combination makes a prior art reference inoperable for its intended purpose. See In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose). See also In re Ratti, 270 F.2d 810, 123 USPQ 349 (C.C.P.A. 1959) (Obviousness rejection is improper if substantial reconstruction or redesign of the elements or change in the basic principles of operation of the prior art references is necessary to arrive at the invention.) Non-ornamental features appearing in claims cannot be ignored. In re Debus, Civ. App. No. 93-1320, slip op. at 3 (Fed. Cir. Dec. 10, 1993) (unpublished).

The Office Action asserts:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the damping apparatus of Weyand to have included an automatic means of providing variable resistance to the movement of the hub, as taught by Miesner, in order to provide a means of adjusting the damping characteristics of the damper apparatus without manually altering the mechanical structure of the apparatus.

No adequate support is offered in the Office Action for the proposition that one of ordinary skill in the art would seek to modify the damping apparatus of Weyand to have included the alternative of an automatic means of providing variable resistance to the movement of the hub, as taught by Miesner. In fact, the mere suggestion circumvents the teachings of Weyand which are specifically directed at providing the very mechanical structure enabling adjustments that the proposed modifications seek to displace.

Weyand is clear in its objectives to provide primarily for simple and precise calibrations of the damping apparatus to adapt for particular installations. And, the structures disclosed and claimed in Weyand provide this ability by allowing the adjustment of immersion depth of the rotary damper. Miesner is clear in its objectives to cancel magnetic fields in the device at all places except in a narrow channel of magnetorheological fluid. The structures disclosed and claimed in Miesner provide this ability with at least two coils on either side of the channel each producing its own magnetic field in a manner designed to substantially cancel magnetic fields everywhere but in the narrow channel. These objectives of Weyand and Miesner cannot be said to teach the present invention which in no way is concerned with calibratability for particular applications nor elimination of magnetic field from all areas of the device save a narrow channel of magnetorheological fluid. It is the specific manual altering of damping that is a central objective of Weyand that the proposed combination seeks to eliminate by altering it with the magnetorheological aspects of Miesner. In this regard, the proposed combination therefore renders at least Weyand inoperable for its intended purpose.

Additionally, the Office Action ignores certain non-ornamental features appearing in the claims that are not disclosed in either Weyand or Miesner in order to arrive at the present invention as claimed in claims 1, 6 and 11 and all claims that depend therefrom. Both Weyand and Miesner therefore require substantial reconstruction or redesign through the addition of these ignored and undisclosed

features and changes in the basic principles of operation. For example, a linear to rotary conversion mechanism as claimed requires both a rotatable shaft that is rotatably coupled to the translatable member and a hub that is fixed to the shaft. Neither Weyand or Miesner can provide these limitations alone or in combination. Therefore, to arrive at the present invention, substantial reconstruction or redesign of the respective elements of both Weyand and Miesner is required. Also, to arrive at the present invention, Miesner would require elimination of one of the coils that is central to its objectives and operation of the apparatus. Thus, to arrive at the claimed damping apparatus elimination of all but one coil of Miesner is necessary which, of course, constitutes substantial reconstruction or redesign of Miesner elements and changes in the basic principles of operation of Miesner. The proposed combination also makes Miesner inoperable for its intended purpose in as much as the dual-coil and cooperative field arrangement is eliminated therefrom to achieve the present invention. Moreover, with respect to claims 6 and 11 and all claims that depend therefrom, a damping mechanism as claimed requires that the outer surface of the hub and sidewall of the housing define a channel therebetween, a means for generating a single electromagnetic field within the channel, and a fluid located within the channel having a viscosity that can be varied by application of the electromagnetic field. This arrangement wherein the sidewall of the housing partially defines the "working" channel of the present invention is not found in either Weyand or Miesner. And, with respect to Miesner, any such similar structural channel and fluid arrangement fails to meet the additional operative limitations with respect to electromagnetic field therein since Miesner specifically teaches absence of such field from such location.

Obviousness under § 103 is a legal conclusion based on factual evidence (In re Fine, 837 F.2d 1071, 1073, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988), and the subjective opinion of the Examiner as to what is or is not obvious, without evidence in support thereof, does not suffice. Since the Examiner has not provided a

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sufficient factual basis, which is supportive of his position (see In re Warner, 379 F.2d 1011, 1017, 154 U.S.P.Q. 173, 178 (C.C.P.A. 1967), cert. denied, 389 U.S. 1057 (1968)), the rejection of claims 1, 6 and 11 is improper. Therefore, it is respectfully submitted that claims 1, 6 and 11 and the claims dependent therefrom are allowable over the rejections under 35 U.S.C. § 103.

Based on the above, it is respectfully submitted that all pending claims are in a condition for allowance and that same be allowed to proceed to issue. Furthermore, upon allowance of the pending claims, Applicant respectfully requests reconsideration of claims 5, 10, 15, 17 and 28 earlier withdrawn in response to a restriction requirement and that same be found allowable and allowed to proceed to issue pursuant to 37 CFR 1.141.

If the Examiner has any questions regarding the contents of the present response he may contact Applicants' attorney at the phone number appearing below.

Respectfully submitted,



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